

US Serial No. 10/828,595
Page 3 of 9

IN THE CLAIMS:

Please cancel without prejudice Claims 15 through 20. Please amend Claims 1, 2, 8, 9 and 10, as follows.

1. (currently amended) A dust testing facility for testing environmental dust affects upon a motor vehicle, comprising:

a dust testing chamber having an interior chamber space structured to receive therewithin a motor vehicle, said dust testing chamber comprising a ceiling, an oppositely disposed flooring group and a plurality of sidewalls disposed between said ceiling and said flooring group, said ceiling, flooring group and sidewalls collectively defining said interior chamber space; said flooring group comprising a floor grating; a plenum below said floor grating; and a plurality of return ducts interfaced with said plenum and fluidically communicating with said interior chamber space through said floor grating;

an air supply system configured to supply flowing air to said dust testing chamber;

a dust supply system configured to provide a mixture of fluidized dust and compressed air;

a dust spray system mounted within said dust testing chamber and connected to said dust supply system, said dust spray system being configured to provide clouding of the dust within said interior chamber space in response to receiving the mixture of fluidized dust and compressed air from said dust spray system; and

a dust recapture system connected between said flooring group and said air supply system and further connected with said dust supply system, said dust recapture system comprising:

~~said flooring group comprising a floor grating; a plenum below said floor grating; and a plurality of return ducts interfaced with said plenum and fluidically communicating with said interior chamber space through said floor grating;~~

an air filtration unit structured to filter air and the dust from said flooring group and allow the flowing air to recyclably pass into said air supply system; and

US Serial No. 10/828,595

Page 4 of 9

a return dust fluidizer structured to fluidize the dust from said plenum and return the dust to said dust supply system.

2. (currently amended) The facility of Claim 1, wherein said plenum comprises a plurality of acutely angled plenum walls defining a set of gravitational low points ~~point~~ running along a length of said dust testing chamber; wherein each return duct of said plurality of return ducts is located, respectively, at each ~~gravitationally lowest point in said set~~, and wherein said plurality of return ducts communicate with said air filtration unit.

3. (original) The facility of Claim 2, wherein said dust comprises road dust having a size range between substantially zero and 180 microns.

4. (original) The facility of Claim 2, wherein said air supply system comprises:
a fan unit fluidically communicating with said air filtration unit in upstream relation therewith; and

temperature and humidity regulation components connected with said fan unit in downstream relation therewith, said temperature and humidity regulation components imparting the flowing air with predetermined values of relative humidity and temperature;

wherein said air supply system is selectively adjustable to provide an air pressure of said interior chamber space which is below atmospheric pressure.

5. (original) The facility of Claim 4, wherein said air flow system further comprises a plurality of vents mounted to said ceiling; and wherein dust spray system comprises a plurality of dust spray nozzles located adjacent said ceiling.

6. (original) The facility of Claim 5, further comprising a source of back air pressure connected to said air filtration unit which is selectively activated to purge said filtration unit of dust and thereby locate the purged dust in said return dust fluidizer.

US Serial No. 10/828,595

Page 5 of 9

7. (original) The facility of Claim 6, further comprising a leak detection device connecting into said interior chamber space through a portal formed in a selected said sidewall.

8. (currently amended) A dust testing facility for testing environmental road dust affects upon a motor vehicle, comprising:

a dust testing chamber having an interior chamber space structured to receive therewithin a motor vehicle, said dust testing chamber comprising a ceiling, an oppositely disposed flooring group and a plurality of sidewalls disposed between said ceiling and said flooring group, said ceiling, flooring group and sidewalls collectively defining said interior chamber space;

an air supply system configured to supply flowing air to said dust testing chamber;

road dust having a size range between substantially zero and 180 microns;

a dust supply system configured to fluidize said road dust and provide a mixture of fluidized road dust and compressed air;

a dust spray system mounted within said dust testing chamber and connected to said dust supply system, said dust spray system being configured to provide clouding of said road dust within said interior chamber space in response to receiving the mixture of the fluidized road dust and compressed air from said dust spray system; and

a dust recapture system connected between said flooring group and said air supply system, wherein the road dust sprayed into said dust testing chamber by said dust spray system is returned to said dust supply system, and wherein the flowing air introduced into said dust testing chamber is recycled ~~recycled~~ to said air supply system.

9. (currently amended) The facility of claim 8, wherein ~~said dust recapture system comprises:~~

said flooring group ~~comprising~~ comprises: a floor grating; a plenum below said floor grating; and a plurality of return ducts interfaced with said plenum and fluidically communicating with said interior chamber space through said floor grating; and

US Serial No. 10/828,595

Page 6 of 9

said dust recapture system comprises:

an air filtration unit structured to filter air and said road dust from said flooring group and allow the flowing air to recyclably pass into said air supply system; and

a return dust fluidizer structured to fluidize said road dust from said plenum and return said road dust to said dust supply system.

10. (currently amended) The facility of Claim 9, wherein said plenum comprises a plurality of acutely angled plenum walls defining a set of gravitational low points ~~point~~ running along a length of said dust testing chamber; wherein each return duct of said plurality of return ducts is located, respectively, at each ~~gravitationally lowest point of said set~~, and wherein said plurality of return ducts communicate with said air filtration unit.

11. (original) The facility of Claim 10, wherein said air supply system comprises: a fan unit fluidically communicating with said air filtration unit in upstream relation therewith; and

temperature and humidity regulation components connected with said fan unit in downstream relation therewith, said temperature and humidity regulation components imparting the flowing air with predetermined values of relative humidity and temperature;

wherein said air supply system is selectively adjustable to provide an air pressure of said interior chamber space which is below atmospheric pressure.

12. (original) The facility of Claim 11, wherein said air flow system further comprises a plurality of vents mounted to said ceiling; and wherein dust spray system comprises a plurality of dust spray nozzles mounted to said ceiling.

13. (original) The facility of Claim 12, further comprising a source of back air pressure connected to said air filtration unit which is selectively activated to purge said filtration unit of said road dust and thereby locate the purged road dust in said return dust fluidizer.

US Serial No. 10/828,595

Page 7 of 9

14. (original) The facility of Claim 13, further comprising a leak detection device connecting into said interior chamber space through a portal formed in a selected said sidewall.

Claims 15 through 20 (canceled)